

PORSE  
11.3.31.5.1

**Childs, John**

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**From:** Hermans, Marcel  
**Sent:** Wednesday, April 18, 2001 7:55 AM  
**To:** Childs, John  
**Subject:** HartCrowser WQ-monitoring report  
**Importance:** High

My comments on the HartCrowser WQ-monitoring report for the T5/T6 dredging:

Comments to John  
about HC-samp...

Marcel



John,

I do think that it's a good idea to have a data-set available with the sampling and monitoring results from our dredging projects. Although this will mean an extra expense to the Port, the benefits of such database could outweigh these additional costs. However, this will only be the case if we make sure that the data in the database are reliable and of high quality (like all the rest of our work).

For this particular testing event I believe that we are better off considering this a pilot for such testing without including it in the database or using this information for some future arguments about the effects of dredging.

My specific remarks:

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- Is turbidity really a separate environmental concern or is the actual environmental concern the chemical contamination derived from turbidity? ✓
- TSS should be a physical parameter and not a chemical one (?) OK
- Why was flow or velocity not measured, since it's one of the most important parameters in physically characterizing the dredge plume? ✓

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- In characterizing the stations by upstream and downstream, it's very important to define up- and downstream.  
This is/appears meant to be related to the general flow direction of the river and not necessarily to the flow direction during the sampling event. (Which in this case might have been not the same...) ✓

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- Listing all these "reasons why the sampling couldn't occur as planned" in this fashion and with this language makes someone look bad. No matter if that's HartCrowser or the Port and no matter what really happened out there, it will have a negative effect on the usability and reliability of the report. ✓

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- How do conductivity and temperature (perceivably) relate to dredging? (Increase, decrease, improve, ...?) ✓
- The measurements seem to show that dredging decreased the pH which would be good since the "background level" was above WQS. One way to deal with these outcomes would be to take credit for this WQ improvement. Another way would be to say that the equipment must have been out of calibration.  
What might be the real reason is that the actual flow at that moment was going upriver, so that the station that was defined as "upstream" was really "downstream" of the dredging operation at that moment.... ✓

As the boat operator (Walt) told me, and is also stated in the inspector's (Frank's) reports the dredge plume appeared to move slightly upriver during all three sampling events. This could very well be an indication that the current was going upriver at that moment since we were dealing with extremely low flow conditions for the time of year and flow could very well be mostly tide-driven at those days. (It's also not uncommon that flow near the surface is of a different magnitude –and sometimes direction- as the flow near the bottom.)

Just this fact that the flow was close to zero should have a significant effect on movement of turbidity clouds. Therefore, this aspect should be addressed and quantified if we want to use this data for any future references whatsoever. I believe flow and velocity data are a necessary element of any dredge plume study.

Some phrases from Frank's daily reports:

Januari 25<sup>th</sup>:

2:00 pm I observed that there appeared to be no visible turbidity 100 feet downstream from the dredge bucket.

4:00 pm I marked off 100 feet downstream from the dredge bucket to assist with the water sampling by Walt, John, and Hart Crowser. I observed that there appeared to be no visible turbidity 100 feet downstream from the dredge bucket. I noted that the turbidity plume from the dredging operation appeared to be moving slightly upstream.

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1:50 pm Per Telecon from John Childs (Port Environmental), he notified me that he would be on site in one hour with Walt Haynes (Port Engineer) and Hart Crowser (Environmental Consultant) to begin water sampling. John indicated that they did not plan to collect water samples any closer than 100 feet downstream from the dredge bucket. Per Telecon to Greg Perkins, I notified him that the Port boat would be sampling in about an hour and that they would be no closer than 100 feet from the dredge bucket. Greg informed me that there was a 0.3 of a foot rise in the river elevation since this morning.

3:00 pm Per telecon from Greg Speyer, Tidewater informed him that they had 3 barges in Berth 605. They did not plan to move them until shortly before the 2:00 am ship arrival. I notified Lety. Hickey was dredging at the 2380 foot mark of Berth 603. The draft opposite the pump house was at 6 feet. I observed that there appeared to be no visible turbidity 100 feet downstream from the dredge bucket. The turbidity plume was 30 feet downstream from the dredge bucket and was moving slightly upstream. Walt (Port Engineer) and Hart Crowser (Environmental Consultant) were taking water samples downstream from the dredge bucket.

Per telecon from Greg Speyer, the B6 and No. 22 barges were the two barges that were conflicting with the dredging at Berth 605.

4:00 pm The turbidity plume was 25 feet downstream from the dredge bucket and was moving slowly upstream. The barge draft opposite the pump house was at 7 feet. Hickey was dredging at the 2425 foot mark of Berth 603.

Februari 6<sup>th</sup>:

10:45 am Hickey was dredging at the 2380 foot mark of Berth 603. I observed that there appeared to be no visible turbidity 100 feet downstream from the dredge bucket. The turbidity plume was right at the dredge bucket and was moving upstream.

11:30 am Hickey was dredging at the 2510 foot mark of Berth 603. I observed that there appeared to be no visible turbidity 100 feet downstream from the dredge bucket. The turbidity plume was

visible at 30 feet downstream from the dredge bucket and was flowing slightly upstream. Hickey removed debris from the 4 inch screen.

1:50 pm Hickey was dredging at the 1370 foot mark of Berth 604. The barge draft opposite the pump house was at 13.5 feet. I observed that there appeared to be no visible turbidity 100 feet downstream from the dredge bucket. The turbidity plume was 20 feet downstream from the bucket and was moving slightly upstream. The wind was blowing to the east as well. The water level was less than 12 inches below the top of the barge at Bin No.1. I noted that Walt (Port Engineer) and Hart Crowser (Environmental Consultant) were in the Port boat sampling water downstream from the dredging operation.

3:00 pm Hickey was dredging at the 1420 foot mark of Berth 604. They moved ahead to the 1440 foot mark. The screen was over Bin No.6. The turbidity plume was 20 feet downstream from the bucket and was moving upstream. Walt and Hart Crowser were still sampling water from the river.

Frank Notes - moved to

- current

- different current regimes
- plumes went both ways

• never consistently beyond 100'

•

• 1 in 50yr event

• water leaving Bucket

- exceptional case